Oracle® Cloud

Using Oracle Coherence Cloud



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1

Get Started with Oracle Coherence Cloud

Learn about the components of Oracle Coherence Cloud and perform any prerequisite tasks.

Topics:

- About Oracle Coherence Cloud
- Before You Begin with Oracle Coherence Cloud

About Oracle Coherence Cloud

Oracle Coherence Cloud offers the capabilities of Oracle Coherence in the Oracle Cloud Infrastructure environment.

Oracle Coherence Cloud is available as an application in the Oracle Cloud Infrastructure Marketplace. After launching the application, you can use a simple wizard interface to configure and provision your Coherence environment along with cache servers and supporting cloud resources.

After creating an Oracle Coherence stack, you can initialize a Coherence cluster and deploy applications to it just like on-premises cluster. You can also administer the Coherence servers on the compute instances using a secure shell (SSH) client and standard Linux tools.

Oracle Coherence Cloud supports Bring Your Own License (BYOL) that enables you to use your existing on-premise Oracle Coherence license in Oracle Cloud Infrastructure. Oracle Coherence Cloud supports these Oracle Coherence releases:

- Oracle Coherence 12c (12.2.1.3)
- Oracle Coherence 12c (12.2.1.4)
- Oracle Coherence 14c (14.1.1.0)

Before You Begin with Oracle Coherence Cloud

Before you set up your Coherence environment with Oracle Coherence Cloud, you must complete the prerequisite tasks.

Topics:

- Understand the Architecture of Oracle Coherence Cloud
- Create a Compartment
- Create an SSH Key

Understand the Architecture of Oracle Coherence Cloud

Learn about the components that comprise the Oracle Coherence Cloud environment.

Oracle Coherence Cloud leverages the following Oracle Cloud Infrastructure components to provision cloud instances and networks that support your Oracle Coherence Cloud environment. Ensure that you have access to these Oracle Cloud Infrastructure components and services in order to use Oracle Coherence Cloud.

- **Marketplace:** Oracle Coherence Cloud is accessed as an application in the Oracle Cloud Infrastructure Marketplace. When you launch an Oracle Coherence Cloud application from Marketplace, it prompts you for some basic information, and then directs you to Resource Manager to complete the configuration of your Oracle Coherence Cloud stack and supporting cloud resources.

 See Overview of Marketplace in the Oracle Cloud Infrastructure documentation.

- **Resource Manager:** You can track and monitor the progress of an Oracle Coherence Cloud stack using the Resource Manager in Oracle Cloud Infrastructure. A stack also provides a convenient method of deleting the cloud resources for a cluster when you no longer require them. A Resource Manager stack in Oracle Coherence Cloud comprises of a compute instance for Coherence servers in the cluster, a bastion compute instance that provides access to a cluster in a private subnet, and a virtual cloud network (VCN), including subnets, route tables, and security lists.

 See Overview of Resource Manager in the Oracle Cloud Infrastructure documentation.

- **Compute**: Oracle Cloud Infrastructure lets you provision compute instances as needed to meet your application requirements. The Coherence servers that make up the Oracle Coherence Cloud cluster run on one or more compute instances. Oracle Cloud Infrastructure offers both bare metal and virtual machine instances. Based on your application requirement, you can select an appropriate instance type.

 See Overview of the Compute Service and Regions and Availability Domains in the Oracle Cloud Infrastructure documentation.

- **Virtual Cloud Network**: Oracle Coherence Cloud assigns compute instances to specific subnets in a virtual cloud network (VCN).

 A VCN in Oracle Cloud Infrastructure covers a single, contiguous CIDR block of your choice. A subnet is a subdivision of a VCN that consists of a contiguous range of IP addresses that do not overlap with other subnets in the VCN. A VCN includes one or more subnets, route tables, security lists, gateways, and DHCP options. By default subnets span an entire region in Oracle Cloud Infrastructure. Alternatively, you can create subnets that are specific to one availability domain (AD) in a region.

 Oracle Coherence Cloud can create a Virtual Cloud Network (VCN) and subnet in Oracle Cloud Infrastructure for a new Oracle Coherence Cloud instance, or you can create your own VCN before creating an instance.

 See VCNs and Subnets in the Oracle Cloud Infrastructure documentation.

Create a Compartment

All the compute instances, networks, and any supporting cloud resources for the new Oracle Coherence Cloud cluster are created within a single compartment.

You can create compartments in Oracle Cloud Infrastructure for your Oracle Coherence Cloud resources, or use existing compartments. The type of access to specific Oracle Cloud Infrastructure resources in a compartment is controlled through

policies. The Oracle Cloud Infrastructure user must have management access in order to use Marketplace applications, Resource Manager stacks and jobs, and create specific resources for an Oracle Coherence Cloud cluster.

See Managing Compartments and Common Policies in the Oracle Cloud Infrastructure documentation.

Create an SSH Key

You must create a secure shell (SSH) key pair to access the compute instances in your Oracle Coherence Cloud cluster.

A key pair consists of a public key and a corresponding private key. When you create a cluster using Oracle Coherence Cloud, you specify the public key. You then access the compute instances from an SSH client using the private key. See Creating a Key Pair in the Oracle Cloud Infrastructure documentation.

2

Create a Cluster with Oracle Coherence Cloud

Learn how to create an Oracle Coherence cluster with Oracle Coherence Cloud.

Topics:

- Create a Coherence Cluster in a Public Subnet
- Create a Coherence Cluster in a Private Subnet

Create a Coherence Cluster in a Public Subnet

Use Oracle Coherence Cloud to create a stack that includes a basic Oracle Coherence cluster, one or more Coherence server compute instances, and network resources.

Topics:

- Launch a Stack
- Specify Stack Information
- Configure Coherence Cluster Parameters
- Configure Coherence Network Parameters
- Create the Stack and Instantiate the Cluster
- Access and Manage Your New Cluster

Launch a Stack

Sign in to Marketplace and specify initial stack information.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. Click the navigation menu and select **Marketplace**.
3. Select the **Coherence Cloud Edition** application from the list of available applications.
4. On the selected application page, the version is set to **14.1.1.0.0** which is the default version.
5. Select the compartment in which to create the stack.
6. Select the **Terms and Restrictions** check box, and then click **Launch Stack**. The Create Stack wizard is displayed.

Specify Stack Information

Specify the name, description, and tags for the stack.

1. On the Stack Information page of the Create Stack wizard, enter a name for your stack.
2. Optionally, enter the description and specify one or more tags for your stack.
3. Click **Next**. The Configure Variables page is displayed.

Configure Coherence Cluster Parameters

Specify the parameters needed to configure the Coherence cluster.

1. In the Coherence Cluster section, enter the resource name prefix. This prefix is used by all the created resources.
2. Select the Coherence shape for the compute instances.
3. Enter the SSH public key.
4. Select the availability domain where you want to create the Coherence compute instances.
5. Select the number of Coherence compute instances.

Configure Coherence Network Parameters

Define the Virtual Cloud Network (VCN) and subnet cofiguration for the cluster. This cluster instance attaches to a public subnet.

1. In the Coherence Network section of the Configure Variables page, select a Virtual Cloud Network (VCN) strategy:
 - Select **Create New VCN**, and then enter a name and CIDR for the new VCN.
 - Select **Use Existing VCN**, and then select the name of the existing VCN.
2. Select one of the following subnet strategies:
 - **Create New Subnet**
 - **Use Existing Subnet**

 > **Note:**
 >
 > If you are creating a new VCN, you cannot use an existing subnet. You can only create a new subnet.

3. Keep the default **Use Public Subnet** selection.
4. Select the subnet span:
 - **Regional Subnet**. This subnet has resources in a region's multiple availability domains, and is not specific to any one availability domain.
 - **AD Specific Subnet**. The subnet is defined in one particular availability domain.
5. For the Coherence subnet, specify one of the following:
 - If you want to use an existing regional subnet, then choose the name of a regional subnet from the list of existing subnets.

- If you want to use an existing availability domain-specific subnet, then choose the name of an availability domain-specific subnet from the list existing subnets.
- If you are creating a new regional or availability domain-specific subnet, then specify a CIDR for the new subnet.

Create the Stack and Instantiate the Cluster

After you have specified the Coherence cluster variables and network parameters, create the stack.

On the Review page of the Create Stack wizard, review the information you have provided, and click **Create**. This creates a plan that you can use to build the Coherence Cluster.

On the Stack Details page, click the **Terraform Actions** drop-down menu and select **Apply**. This instantiates the Coherence cluster. The Job Details page in Resource Manager is displayed. Periodically monitor the progress of the Apply job until it is finished.

Access and Manage Your New Cluster

After creating a stack with Oracle Coherence Cloud, access and manage your new cluster by using Secure Shell (SSH) client software to establish a secure connection.

After creating your cluster:

- View and manage the cloud resources that were created to support your cluster. See View the Cloud Resources for a Cluster.
- Access your cluster.
 1. Sign in to the Oracle Cloud Infrastructure Console.
 2. From the navigation menu, click **Compute**, then click **Instances**.
 3. From the **Compartment** drop-down, select the compartment in which your cluster is created.
 4. Click the name of the cluster instance that you want to access, and copy the public IP address value of that instance.
 5. From your computer, open an SSH tunnel to an unused port as the `opc` user. Provide the path to the private key that corresponds to the public key that you specified when you created the Coherence stack. The SSH command format is:

     ```
     ssh -i path_to_private_key opc@public_ip
     ```

 For example:

     ```
     ssh -i ~/.ssh/xperiment_rsa opc@198.51.100.1
     ```

 The list of running cluster instances is displayed.

Create a Coherence Cluster in a Private Subnet

When you use Oracle Coherence Cloud to create a cluster and assign the Oracle Coherence compute instances to a private subnet, the instances are not accessible from the public Internet.

If you assign a private subnet, then the compute instances can not be directly accessed from outside of Oracle Cloud. Oracle Coherence Cloud creates a bastion compute instance on a public subnet, and from this bastion you can manage and access the Oracle Coherence compute instances. See Connectivity Choices in the Oracle Cloud Infrastructure documentation.

Topics:

- Launch a Stack
- Specify Stack Information
- Configure Coherence Cluster Parameters
- Configure Coherence Network Parameters
- Create the Stack and Instantiate the Cluster
- Access and Manage Your New Cluster in a Private Subnet

Launch a Stack

Sign in to Marketplace and specify initial stack information.

1. Sign in to the Oracle Cloud Infrastructure Console.
2. Click the navigation menu and select **Marketplace**.
3. Select the **Coherence Cloud Edition** application from the list of available applications.
4. On the selected application page, the version is set to **14.1.1.0.0** which is the default version.
5. Select the compartment in which to create the stack.
6. Select the **Terms and Restrictions** check box, and then click **Launch Stack**. The Create Stack wizard is displayed.

Specify Stack Information

Specify the name, description, and tags for the stack.

1. On the Stack Information page of the Create Stack wizard, enter a name for your stack.
2. Optionally, enter the description and specify one or more tags for your stack.
3. Click **Next**. The Configure Variables page is displayed.

Configure Coherence Cluster Parameters

Specify the parameters needed to configure the Coherence cluster.

1. In the Coherence Cluster section, enter the resource name prefix. This prefix is used by all the created resources.
2. Select the Coherence shape for the compute instances.
3. Enter the SSH public key.
4. Select the availability domain where you want to create the Coherence compute instances.
5. Select the number of Coherence compute instances.

Configure Coherence Network Parameters

Define the Virtual Cloud Network (VCN) and subnet cofiguration for a private Coherence cluster.

1. In the Coherence Network section of the Configure Variables page, select a Virtual Cloud Network (VCN) strategy:
 - Select **Create New VCN**, and then enter a name and CIDR for the new VCN.
 - Select **Use Existing VCN**, and then select the name of the existing VCN.
2. Select one of the following subnet strategies:
 - **Create New Subnet**
 - **Use Existing Subnet**

 > **Note:**
 >
 > If you are creating a new VCN, you cannot use an existing subnet. You can only create a new subnet.

3. For subnet type, select **Use Private Subnet**.
4. Select the subnet span:
 - **Regional Subnet**. This subnet has resources in a region's multiple availability domains, and is not specific to any one availability domain.
 - **AD Specific Subnet**. The subnet is defined in one particular availability domain.
5. For the Coherence subnet, specify one of the following:
 - If you want to use an existing regional subnet, then choose the name of a regional subnet from the list of existing subnets for Coherence.
 - If you want to use an existing availability domain-specific subnet, then choose the name of an availability domain-specific subnet from the list existing subnets for Coherence.
 - If you are creating a new regional or availability domain-specific subnet, then specify a CIDR for the new subnet.
6. For the bastion host subnet, specify one of the following:
 - If you are using an existing regional or availability domain-specific subnet, then choose the name of a regional or availability domain-specific subnet from the list of existing subnets for the bastion host.

- If you are creating a new regional or availability domain-specific subnet, specify a CIDR for the new subnet.

Create the Stack and Instantiate the Cluster

After you have specified the Coherence cluster variables and network parameters, create the stack.

On the Review page of the Create Stack wizard, review the information you have provided, and click **Create**. This creates a plan that you can use to build the Coherence Cluster.

On the Stack Details page, click the **Terraform Actions** drop-down menu and select **Apply**. This instantiates the Coherence cluster. The Job Details page in Resource Manager is displayed. Periodically monitor the progress of the Apply job until it is finished.

Access and Manage Your New Cluster in a Private Subnet

After creating a stack with Oracle Coherence Cloud, access and manage your new cluster in a private subnet by using Secure Shell (SSH) client software to establish a secure connection.

After creating your cluster:

- View and manage the cloud resources that were created to support your cluster. See View the Cloud Resources for a Cluster.
- Access your cluster in a private subnet.
 Oracle Coherence compute instances assigned to a private subnet are not accessible from the public Internet. To access the Coherence cluster, you can use the bastion instance that is created on a public subnet and dynamic port forwarding with a secure shell (SSH) utility.
 1. Sign in to the Oracle Cloud Infrastructure Console.
 2. From the navigation menu, click **Compute**, then click **Instances**.
 3. From the **Compartment** drop-down, select the compartment in which your cluster is created.
 4. Click the name of the bastion instance that's associated with your cluster. The bastion instance is identified by `resourcename-bastion-instance`. For example, `abcde7xy-bastion-instance`.
 5. Copy the public IP address value, such as `198.51.100.1`.
 6. To access your cluster on a private subnet, copy your SSH private key from your local machine to the bastion host. For instance,

     ```
     scp -i ~/.ssh/my-private-key ~/.ssh/my-private-key
     opc@198.51.100.1:/home/opc/.ssh
     ```

 7. From your computer, open an SSH client and log in to the bastion node as the `opc` user. Provide the path to the private key that corresponds to the public key that you specified when you created the cluster. The SSH command format is:

     ```
     ssh -i path_to_private_key opc@bastion_public_ip
     ```

For example:

```
ssh -i ~/.ssh/my-private-key opc@198.51.100.1
```

8. After logging in to the bastion host, you can SSH into the cluster instances on the private subnet as shown in the following example:

```
ssh -i ~/.ssh/my-private-key opc@10.0.0.1
```

View the Cloud Resources for a Cluster

Use Resource Manager to view the Oracle Cloud Infrastructure compute instances, networks, and other resources that were provisioned by Oracle Coherence Cloud for your Oracle Coherence cluster.

1. Sign in to the Oracle Cloud Infrastructure Console and select the **Compartment** that contains your stack.
2. Click the navigation menu, select **Resource Manager**, and then select **Stacks**.
3. Click the name of your stack.
4. From the Jobs section, click the latest job whose type is Apply.
5. Click **Associated Resources**. A list of resources in this stack is displayed. The list includes compute instances, virtual cloud networks (VCN), subnets, security lists, gateways, and block storage volumes.
6. Click the name of a resource to manage it and to view its details. For example, click a compute instance to view its IP address or to reboot it.

3

Manage a Cluster in Oracle Coherence Cloud

Learn how to control and administer Coherence cluster services, and delete the cluster when you no longer need it.

Topics:

- Access Cluster Services
- Delete a Cluster

Access Cluster Services

Once your cluster is successfully provisioned, a systemctl service called `coherence@default-cluster.service` is created on each node. Administer your Coherence cluster on Oracle Cloud Infrastructure by using the systemctl commands on the `coherence@default-cluster.service`.

> **Note:**
>
> To change cluster configuration properties such as, the log level, you must modify the `default-cluster.env` file located in the `/opt/usr/local/etc/` directory. For the changes to take effect, ensure that you restart the cluster instance after modifying the `default-cluster.env` file.

Using the SSH utility, log into your cluster instance as the `opc` user and issue the following commands to administer your cluster services:

Command	Description
`sudo systemctl status coherence@default-cluster.service`	Returns the status of the cluster instance
`sudo journalctl -u coherence@default-cluster.service`	View logs from your cluster instance To follow the logs, add the `-f` option to this command.
`sudo systemctl stop coherence@default-cluster.service`	Stops the cluster instance
`sudo systemctl start coherence@default-cluster.service`	Starts the cluster instance
`sudo systemctl disable coherence@default-cluster.service`	Disables the Coherence cluster instance

`sudo systemctl enable coherence@default-cluster.service`	Enables the Coherence cluster instance

Add a New Cluster Instance on a Node

You can add one or more cluster instances on each node. To add a new Coherence cluster instance on a node:

1. Using SSH, log in to your node as the `opc` user. Then, switch to the `oracle` user by running the `sudo su - oracle` command.
2. Open the `/opt/usr/local/etc/` directory of your current node.
3. Save a copy of the `default-cluster.env` file with a new name, *`new-cluster.env`*.
4. Edit the new *`new-cluster.env`* file and change the value of the `CLUSTER_NAME` parameter to *`new-cluster`*.
5. Change any other parameter as required.
6. Exit `sudo su - oracle` and switch back to the `opc` user.
7. Create the cluster instance by running the `sudo systemctl enable coherence@`*`new-cluster`*`.service` command.
8. Start the new cluster instance by running the `sudo systemctl start coherence@`*`new-cluster`*`.service` command.

Delete a Cluster

Use Resource Manager to destroy and delete the stack when you no longer need an Oracle Coherence Cloud cluster.
Perform the following two actions to delete a cluster:

1. Destroy a Stack – A destroy job terminates the compute instance or instances for the cluster but the stack's state and job history remain.
2. Delete a Stack – A delete job permanently removes the stack and all related resources that were created for the cluster, such as compute instances and networking components.

Destroy a Stack

To delete an Oracle Coherence Cloud cluster, use Resource Manager to destroy the stack associated with the cluster before you execute the Delete Stack action.

A destroy action terminates the compute instance or instances for the domain but the stack's state and job history remain until you execute the Delete Stack action. To destroy a stack:

1. Access **Resource Manager** in the Oracle Cloud Infrastructure Console.
2. From the **Compartment** drop-down menu, select the compartment where your stack is located.
3. Click the name of your stack.
4. On the Stack Details page, click **Terraform Actions**, and then click **Destroy**.

5. When prompted for confirmation, click **Destroy**. A job with type `Destroy` and state `Accepted` is added to the top of the table under **Jobs**. After a few minutes, the state changes to `In Progress`.
6. Wait for the destroy job state to change to `Succeeded` before you delete the stack.

To verify the stack has been destroyed, navigate to the Compute Instances page. Instances associated with a destroyed stack are labeled `Terminated`.

Delete a Stack

To delete an Oracle Coherence Cloud cluster, use Resource Manager to delete the stack associated with the cluster, but only after you have successfully destroyed the stack.

> **Note:**
>
> To verify a stack has been destroyed, navigate to the Compute Instances page. Instances associated with a destroyed stack are labeled `Terminated`.

A delete action permanently removes the stack and all related resources that were created for the cluster, such as compute instances and network components. To delete a stack:

1. Access **Resource Manager** in the Oracle Cloud Infrastructure Console.
2. From the **Compartment** drop-down menu, select the compartment where your stack is located.
3. Click the name of your stack.
4. On the Stack Details page, click **Delete Stack**.
5. When prompted for confirmation, click **Delete**.

The Stacks page redisplays immediately. You'll no longer see your stack listed on the page.

4

Scale Out a Coherence Cluster

Scaling a cluster adds or removes nodes from a server cluster.

To meet the demands of larger workloads, Oracle Coherence Cloud provides support for scaling out an existing cluster by adding more compute instances to your cluster.

> **Note:**
>
> Currently, Oracle Coherence Cloud does not support automatic scaling. However, you can scale out your cluster manually.

Topics:

- Prerequisites
- Launch a Second Stack
- Modify the Operational Override File
- Verify that the Cluster is Scaled Out

Prerequisites

It is assumed that you have installed Oracle Coherence Cloud and created a stack comprising compute instance(s), using the Oracle Cloud Infrastructure Marketplace.

Before you begin scaling out your Coherence cluster, complete the prerequisite steps:

1. Sign in to the Oracle Cloud Infrastructure Console.
2. Click the navigation menu, select **Compute**, and then select **Instances**.
3. Click the name of your Coherence server instance(s).
4. From the Instance Details page, make a note of the following:
 - The name of the installed Virtual Cloud Network (VCN)
 - The name of the installed subnet, subnet type, and subnet span
5. Save a copy of the operational override file associated with your existing node:
 a. Using SSH, log in to the public IP address of one of the nodes as the `opc` user. Then, switch to the `oracle` user by running the `sudo su - oracle` command.
 b. In your current node, open the `/opt/usr/local/etc/` directory and save a copy of the `coh_operational_override.xml` file.

Launch a Second Stack

Using Marketplace, launch a second stack and instantiate the cluster as described in **Create a Cluster with Oracle Coherence Cloud**. While creating the stack, be sure to:

1. Choose the same Coherence version that you used while launching your initial stack.
2. On the **Configure Variables** page in the Create Stack wizard:
 - Choose the same availability domain as your initial stack.
 - Select the number of compute instances that you wish to scale out the cluster to.
 - Select **Use Existing VCN** and choose the name of the VCN that you noted from the Instance Details page of your initial stack.
 - Choose **Use Existing Subnet** and ensure that you specify the same subnet type and subnet span that you specified while provisioning your initial stack.
 - Choose the name of the existing subnet you created while provisioning your initial stack. You can find the subnet name on the Instance Details page of your initial stack.

Modify the Operational Override File

Each Coherence cluster uses an operational override file, `coh_operational_override.xml`, to modify the out-of-box default cluster configuration. Modify this file to include the configuration information of the new compute instance(s) created.

You must also update all the other operational override files in your cluster to reflect the new Well Known Addresses (WKA) list. The list of WKA addresses should be the same for every cluster member to ensure that different cluster members do not operate independently from the rest of the cluster. To understand how to use Well Known Addresses, see Using Well Known Addresses in *Developing Applications with Oracle Coherence*.

After the stack is created and the cluster is instantiated:

1. Click the navigation menu, select **Compute**, and then select **Instances**.
2. Click the name of your compute instance(s).
3. From the Instance Details page, note the private IP address of your new compute instance(s).
4. Open the `coh_operational_override.xml` file that you had saved earlier, and add an entry for the IP address of the new node(s) in the `<address>` element as shown in the sample file. In this example file, we add an entry for a single node with the private IP address 10.0.3.4.

```
<?xml version='1.0'?>

<!--
This operational configuration override file is set up for use with
Coherence in
a production mode.
-->
<coherence xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://xmlns.oracle.com/coherence/coherence-operational-config"
  xsi:schemaLocation="http://xmlns.oracle.com/coherence/coherence-
operational-config coherence-operational-config.xsd">
```

```
  <cluster-config>
    <unicast-listener>
      <well-known-addresses>
        <socket-address id="1"><address>10.0.3.2</address><port>7574</
port></socket-address>
        <socket-address id="2"><address>10.0.3.3</address><port>7574</
port></socket-address>
        <socket-address id="3"><address>10.0.3.4</address><port>7574</
port></socket-address>
      </well-known-addresses>
    </unicast-listener>
  </cluster-config>
</coherence>
```

> **Note:**
>
> For each node, ensure that you specify a unique `id` attribute for each `socket-address` element. If you have changed the value of the cluster port from the default value 7574, then you must specify the new value for the port in this file.

5. Update each override file for every node in your cluster to reflect the new Well Known Addresses (WKA) list:
 a. Using SSH, log in to the public IP address of the node as the `opc` user. Then, switch to the `oracle` user by running the `sudo su - oracle` command.
 b. Open the `coh_operational_override.xml` file located in `/opt/usr/local/etc/`.
 c. Replace the content of this file with the content of the sample file above that contains your new IP(s) in the WKA list.
 d. Type `exit` at the shell prompt to return to the `opc` user.

 Repeat these steps for all the nodes in your cluster.
6. Restart cluster services by running the following commands:

```
sudo systemctl stop coherence@default-cluster.service
sudo systemctl start coherence@default-cluster.service
```

> **Note:**
>
> Replace `default-cluster` with your cluster name.

Verify that the Cluster is Scaled Out

After you have updated the operational override files on all nodes, verify that the new Well Known Address (WKA) list has taken effect and that the cluster size has increased.

1. Run the following command:

   ```
   sudo journalctl -u coherence@default-cluster.service | grep -A 4
   WellKnownAddressList
   ```

 The last entry in the output reflects the private IP address of the new compute instance. This confirms that the new WKA list is in effect.

   ```
   Nov 21 00:24:41 tim2c93a-coh-0 start_coherence.sh[6799]:
   WellKnownAddressList(
   Nov 21 00:24:41 tim2c93a-coh-0 start_coherence.sh[6799]: 10.0.3.2
   Nov 21 00:24:41 tim2c93a-coh-0 start_coherence.sh[6799]: 10.0.3.3
   Nov 21 00:24:41 tim2c93a-coh-0 start_coherence.sh[6799]: 10.0.3.4
   Nov 21 00:24:41 tim2c93a-coh-0 start_coherence.sh[6799]: )
   ```

 If you have scaled out your cluster by more than one node, then the above output must reflect the private IP addresses of all those nodes.

2. View logs by running the following command:

   ```
   sudo journalctl -u coherence@default-cluster.service | tail
   ```

 The last line of the log reflects the increased number of nodes after the scale out operation.

   ```
   Nov 21 00:24:43 tim2c93a-coh-0 start_coherence.sh[6799]: 2019-11-21
   00:24:43.093/4.444
   Oracle Coherence GE 14.1.1.0.0 <Info>
   (thread=DistributedCache:PartitionedCache, member=11):
   Partition ownership has stabilized with 3 nodes
   ```